

CLAIMS

1. Pollution control device comprising a pollution control element arranged in a casing with non-woven mounting mat disposed between the casing and the pollution control element, said non-woven mat being a non-intumescent mat comprising at least 90% by weight based on the total weight of the mat of chopped magnesium aluminium silicate glass fibers that have a number average diameter of 5µm or more and a length of 0.5 to 15cm, said glass fibers being needle punched or stitch bonded, said mat being free or substantially free of organic binder and said mat comprising at least two layers of said chopped magnesium aluminum silicate glass fibers, wherein said at least two layers differ in their magnesium aluminum silicate glass fiber composition.

2. Pollution control device according to claim 1 wherein said glass fibers comprise aluminium oxide in an amount of 10 to 30% by weight, silicon dioxide in an amount of 52 to 70% by weight and magnesium oxide in an amount of 1 to 12% by weight based on the total weight of the glass fiber and wherein the weight percentages of aluminium oxide, silicon dioxide and magnesium oxide are calculated on a theoretical basis as Al_2O_3 , SiO_2 and MgO respectively.

3. Pollution control device according to claim 1 wherein glass fiber compositions differ in the length of glass fiber and/or the average diameter of the glass fiber.

4. Pollution control device according to claim 1 wherein the glass fiber compositions differ in the chemical composition of the glass fiber.

5. Pollution control device according to any one of claims 1 to 4 wherein the glass fibers are selected from the group consisting of E-glass fibers, S-glass fibers, S-2 glass fibers, R-glass fibers and a mixture thereof.

6. Pollution control device according to claim 3 wherein one of said at least two layers contacts said casing and comprises E-glass fibers, and another of said at least two layers

contacts said pollution control element and comprises at least one of S-glass fibers, S-2 glass fibers, R-glass fibers and a mixture thereof.

7. Pollution control device according to claim 1 wherein the mount density of said non-woven mat is between 0.2 and 0.7 g/cm³.

8. Machine comprising a diesel engine and a pollution control device as defined in any one of claims 1 to 7.

9. Machine according to claim 8 wherein said machine is a motor vehicle and said diesel engine is a turbo charged direct injection diesel engine.

10. Machine according to claim 8 wherein said machine is a motor vehicle selected from a truck, a bus or a low capacity passenger vehicle.

11. Method of treating exhaust gas from a diesel engine by subjecting the exhaust gas to a pollution control device as defined in any of claims 1 to 7.

12. A mat for mounting a pollution control element in a casing of a pollution control device, said mat being a non-intumescent mat comprising at least 90% by weight based on the total weight of the mat of chopped magnesium aluminium silicate glass fibers that have a number average diameter of 5µm or more and a length of 0.5 to 15cm, said glass fibers being needle punched or stitch bonded, said mat being free or substantially free of organic binder and being comprised of at least two layers of said chopped magnesium aluminium silicate glass fibers, wherein said at least two layers differ in their magnesium aluminum silicate glass fiber composition.

13. Mat according to claim 12 wherein said glass fiber compositions differ in the length of glass fiber and/or the average diameter of the glass fiber.

14. Mat according to claim 12 wherein said glass fiber compositions differ in the chemical composition of the glass fibers.

15. Mat according to claim 12 wherein said glass fibers comprise aluminium oxide in an amount of 10 to 30% by weight, silicon dioxide in an amount of 52 to 70% by weight and magnesium oxide in an amount of 1 to 12% by weight based on the total weight of the glass fiber and wherein the weight percentages of aluminium oxide, silicon dioxide and magnesium oxide are calculated on a theoretical basis as Al_2O_3 , SiO_2 and MgO respectively.

16. Pollution control device according to any one of claims 12 to 15 wherein the glass fibers are selected from the group consisting of E-glass fibers, S-glass fibers, S-2 glass fibers, R-glass fibers and a mixture thereof.

17. Pollution control device according to claim 16 wherein one of said at least two layers contacts said casing and comprises E-glass fibers, and another of said at least two layers contacts said pollution control element and comprises at least one of S-glass fibers, S-2 glass fibers, R-glass fibers and a mixture thereof.